



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**THE MIDDLE EAST AIR NAVIGATION PLANNING
AND IMPLEMENTATION REGIONAL GROUP
(MIDANPIRG)**

**REPORT OF THE TENTH MEETING OF
MET SUB-GROUP (MET SG/10)**

(Virtual Meeting, 17 - 19 May 2022)

The views expressed in this Report should be taken as those of the MIDANPIRG MET Sub-Group and not of the Organization. This Report will, however, be submitted to the MIDANPIRG and any formal action taken will be published in due course as a Supplement to the Report.

Approved by the Meeting
and published by authority of the Secretary General

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of ICAO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontier or boundaries.

TABLE OF CONTENTS

Page

PART I - HISTORY OF THE MEETING

1.	Place and Duration	1
2.	Opening.....	1
3.	Attendance	1
4.	Officers and Secretariat	1
5.	Language.....	1
6.	Agenda.....	1-2
7.	Conclusions and Decisions - Definition	2
8.	List of Draft Conclusions and Draft Decisions.....	2

PART II - REPORT ON AGENDA ITEMS

Report on Agenda Item 1	1-1
Report on Agenda Item 2	2-1
Report on Agenda Item 3	3-1/3-3
Report on Agenda Item 4	4-1/4-3
Report on Agenda Item 5	5-1/5-2
Report on Agenda Item 6.....	6-1
Report on Agenda Item 7.....	7-1

APPENDICES

Appendix 2A	
Appendix 4A and 4B	
Appendix 5A	
Appendix 6A	
List of Participants	Attachment A

PART I – HISTORY OF THE MEETING

1. PLACE AND DURATION

1.1 The Tenth meeting of the Meteorology Sub-Group of the Middle East Air Navigation Planning and Implementation Regional Group (MET SG/10) was held virtually from 17 to 19 May 2022 from 08:00 to 10:00 UTC each day.

2. OPENING

2.1 The meeting was opened by Mr. Mohamed Smaoui, Deputy Regional Director of the ICAO MID Regional Office.

2.2 Mr. Smaoui thanked the participants for joining the meeting as well as the World Meteorological Organization (WMO) and the Secure Aviation Data Information Service (SADIS) Provider for their contributions to the meeting. He noted that SADIS developments include significant changes in 2023 as there will be a significant increase in meteorological information in space and time that will be System Wide Information Management (SWIM) compliant. In the context of SWIM, he emphasized the importance of implementing the ICAO Meteorological Data Information Exchange Model (IWXXM) that is an important step to enable SWIM services.

2.3 He also emphasized that States support the development of the MID Region Air Navigation Report (2022) by reviewing and updating the level of implementation of the priority 1 Aviation System Block Upgrade (ASBU) elements related to the AMET thread. Furthermore, this information is used for updating the MID eANP Volume III – AMET Tables.

2.4 In closing, Mr. Smaoui thanked the participants for their attendance and provided his best wishes for a successful and productive meeting.

3. ATTENDANCE

3.1 The meeting was attended by a total of thirty-eight (38) participants, from eleven (11) States (Bahrain, Egypt, Iran, Kuwait, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates, United Kingdom and Yemen) as well as two (2) International Organizations (AACO and WMO). The list of participants is provided at **Attachment A**.

4. OFFICERS AND SECRETARIAT

4.1 Agenda Item 1 included the election of Chairpersons noting the MET SG Chair and Vice-Chair positions were vacant. Despite the efforts made to encourage members of MET SG to fill these positions, there were no volunteers. Therefore, the meeting was chaired by Mr. Christopher Keohan, Air Navigation Systems Implementation (Meteorology), ICAO Europe and North Atlantic. Mr. Keohan also served as Secretary of the meeting.

5. LANGUAGE

5.1 The meeting was conducted in English and documentation posted under meetings on the ICAO MID Regional Office website.

6. AGENDA

6.1 The following Agenda was adopted:

Agenda Item 1: Adoption of the Provisional Agenda and election of Chairpersons

Agenda Item 2: Follow-up on MIDANPIRG/19 Conclusions and Decisions relevant to MET

Agenda Item 3: Global and Regional Developments

Agenda Item 4: MET Planning and Implementation issues:

- Performance Framework for MET implementation in the MID Region
- Review of the implementation of WAFS and SADIS
- Review of requirements for OPMET data and status of implementation of Regional OPMET Centre (ROC) Jeddah and back-up ROC Bahrain as well as IWXXM implementation

Agenda Item 5: Review of air navigation deficiencies in the MET field

Agenda Item 6: Future Work Programme

Agenda Item 7: Any other business

7. CONCLUSIONS AND DECISIONS - DEFINITIONS

7.1 All MIDANPIRG Sub-Groups and Task Forces record their actions in the form of Conclusions and Decisions with the following significance:

- a) **Conclusions** deal with the matters which, in accordance with the Group's terms of reference, merit directly the attention of States on which further action will be initiated by ICAO in accordance with established procedures; and
- b) **Decisions** deal with matters of concern only to the MIDANPIRG and its contributory bodies.

8. LIST OF DRAFT CONCLUSIONS AND DRAFT DECISIONS

DRAFT CONCLUSION 10/1: 0.25 DEGREE WAFS HAZARD DATA

DRAFT CONCLUSION 10/2: NOVEMBER 2023 WAFS UPGRADES

PART II: REPORT ON AGENDA ITEMS

REPORT ON AGENDA ITEM 1: ADOPTION OF THE PROVISIONAL AGENDA AND ELECTION OF CHAIRPERSONS

1.1 The subject was addressed in WP/1 presented by the Secretariat. The meeting reviewed and adopted the Provisional Agenda as described at Para 6 of the History of the Meeting.

1.2 Information related to the MET SG/10 Chairperson, Vice Chairperson and and Secretariat is provided in Para 4 of the History of the Meeting.

REPORT ON AGENDA ITEM 2: FOLLOW-UP ON MIDANPIRG/19 CONCLUSIONS AND DECISIONS RELEVANT TO MET

2.1 The subject was addressed in WP/2 presented by the Secretariat. The meeting noted the status of the MIDANPIRG/19 Conclusions and Decisions relevant to MET and the follow-up actions taken by concerned parties as at **Appendix 2A**.

REPORT ON AGENDA ITEM 3: GLOBAL AND REGIONAL DEVELOPMENTS**MET Panel**

3.1 The subject was addressed in WP/3 presented by the Secretariat. The meeting was given an overview of activities currently being undertaken at the global level by the MET Panel (METP) and its working groups (Working Group on Meteorological Requirements and Integration (WG-MRI), Working Group on Meteorological Information and Service Development (WG-MISD), Working Group on Meteorological Information Exchange (WG-MIE), Working Group on Meteorological Operations Group (WG-MOG) and Working Group on Meteorology Cost Recovery Guidance and Governance (WG-MCRGG)). The meeting noted that the structure of the METP has been reviewed and updated such that the WG-MRI and WG-MISD have been merged to improve the efficiency of the METP structure. This new group is called the Working Group on Meteorological Requirements and Development (WG-MRAD).

3.2 The meeting noted that Amendment 81 to Annex 3 was expected to be applicable in November 2023; however, the applicability date will most likely change to November 2024, subject to review by the ICAO Air Navigation Commission (ANC). These proposed changes by the METP include:

- restructure of Annex 3 and new PANS-MET
 - note that requirements will remain in Annex 3 while means of compliance and technical specifications will reside in PANS-MET
- amendments to the provisions related to space weather advisory service
 - such as clarifying that ICAO designates the centres as regional or global
 - adding the definition of ‘space weather information service’
 - clarifying the role of the global and regional centres
 - clarifying the supply of advisory information
 - adding Meteorological Watch Offices (MWO) as recipients of space weather advisory information since in some States the MWO also serves the function of an aerodrome meteorological office
 - removing international NOTAM offices from receiving this information (note that this results in consequential amendments to Annex 15)
- updating provisions related to IWXXM
 - removal of the term ‘GML’
 - a few changes in METAR/SPECI that would remove constraints related to the number of Runway Visual Range (RVR) and include tenths of temperature and dew point
 - clarify the limitation of the number of coordinates in IWXXM and Traditional Alphanumeric Code (TAC)
- inclusion of Quantitative Volcanic Ash (QVA) information, which is only in IWXXM
 - note that implementation will occur at all 9 Volcanic Ash Advisory Centres (VAAC) from 2024 to 2026 and that current Volcanic Ash Advisory (VAA) and Volcanic Ash Advisory in Graphical format (VAG) products will still be issued, but expected to be discontinued at a later date
- inclusion of provisions for Volcano Observatory Notice to Aviation (VONA) information in both TAC and IWXXM and proposed changes to VAA and Aerodrome Warning templates

- note that the MID eANP Volume I, Page V-2, paragraph 2.4 contains a note as follows: *States volcano observatories and associated Table MET I-1 are not applicable for the MID Region;*
- inclusion of World Area Forecast System (WAFS) upgrades
 - next generation WAFS data sets (include increased temporal and spatial resolutions for all WAFS data sets and significant weather (SIGWX) will be provided in IWXXM) and data delivery services
- amendments to the definition of *meteorological authority*
 - the entity arranging for the provision of meteorological service for international air navigation on behalf of a Contracting State
 - *Note. – The responsibilities of the meteorological authority include the provision of oversight and regulation of the meteorological service*
- introduction of a definition for *meteorological service provider*
 - the relevant entity providing meteorological service for international air navigation on behalf of a Contracting State
 - these definitions fall in line with the restructure of Annex 3 and PANS-MET in that the meteorological authority would oversee the implementation of Annex 3 provisions and the meteorological service provider would meet these provisions through means of compliance in PANS-MET

3.3 Furthermore, the meeting noted progress on the development of the Hazardous Weather Information Service (HWIS) that is expected to be included in Amendment 82 applicable in 2026 that would provide operators hazardous information without the potential discontinuities at Flight Information Region (FIR) boundaries that may occur with the issuance of SIGMET by MWOs. In the near term, SIGMET will be issued by MWOs as per the ICAO provisions; however, this may not be the case by the beginning of the next decade.

3.4 The meeting noted that the METP endorsed Version 2.3 of the MET-SWIM Plan and MET-SWIM Roadmap that is expected to be posted on the ICAO METP website (both public and secure) and when that information becomes available, States are encouraged to review these documents.

3.5 The meeting noted WMO's suggestion that in the future the ICAO Secretariat coordinate with Bahrain and Saudi Arabia on updates related to the METP as they are members of this panel.

3.6 The meeting noted that the METP/6 meeting is expected to be held in November 2023.

WMO activities of relevance to ICAO

3.7 The subject was addressed in IP/3 presented by WMO, and in particular, in the context of WMO's latest organization structures, engagement with ICAO and other agencies at the global and regional levels, recent and upcoming events, and other noteworthy information including links to WMO resources.

3.8 With reference to the WMO organizational structures, the meeting noted that the Commission for Aeronautical Meteorology (CAeM), along with other intergovernmental technical commissions were dissolved in 2019. In its place, a new non-governmental [Standing Committee on Services for Aviation \(SC-AVI\)](#) was established under a new intergovernmental [Commission for](#)

[Weather, Climate, Water and Related Environmental Services and Applications \(abbreviated to 'Services Commission' or SERCOM\).](#)

3.9 The primary purpose of SC-AVI is to contribute to furthering the standardized provision of meteorological services for international air navigation and to provide assistance to Members with aeronautical meteorological services to achieve compliance with those standards. The SC-AVI is supported by three expert teams and one advisory group.

3.10 WMO continues to play an active role in the ICAO METP and its working groups (presently WG-MRAD, WG-MIE, WG-MOG and WG-MCRGG). In addition, WMO contributes to the ICAO Airport Economics Panel and Air Navigation Services Economics Panel (AEP-ANSEP) on matters that include charges for and cost recovery of aeronautical meteorological service provision.

3.11 Furthermore, WMO is engaged on the impacts of climate change and variability on aviation with ICAO Committee on Aviation Environmental Protection (CAEP), International Air Transport Association (IATA), Airports Council International (ACI) and the European Union Aviation Safety Agency (EASA).

3.12 WMO also continues to actively contribute to its Accident Classification Task Force (ACTF) and is a key contributor to the preparation of the annual IATA Safety Report, which provides an in-depth review and insight into global and regional accident rates as well as contributing factors, including those relating to meteorological conditions. The MET SG was encouraged to review the latest (2021) IATA Safety Report (<https://www.iata.org/en/publications/safety-report/>).

3.13 In addition, WMO is responsible, at the request of ICAO, for the development and the publication of the IWXXM schemas.

3.14 Additional information on the activities of WMO is accessible via a Services for Aviation website at URL: <https://community.wmo.int/activity-areas/aviation>

REPORT ON AGENDA ITEM 4: MET PLANNING AND IMPLEMENTATION ISSUES**Performance Framework for MET Implementation in the MID Region**

- 4.1 The subject was addressed in WP/4 presented by the Secretariat.
- 4.2 The meeting recalled that for the MID Region Air Navigation Report – 2021, States were reminded to provide the ICAO MID office with the level of implementation of the elements related to the AMET thread priority elements, by 30 December 2021, as per the updated method for estimating actual level of implementation (ref.: SL AN 1/7 – 21/215 dated 18 November 2021). Replies to this State letter were received by 9 States in the MID Region: Bahrain, Egypt, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia and UAE.
- 4.3 The meeting noted that these inputs (amongst others e.g. SADIS Provider) were used as input to the Web-based MID Air Navigation Report (2021) that was endorsed through MIDANPIRG Conclusion 19/5 and the MET Part provided at **Appendix 4A** (note that the tabular part was input to the MID eANP Volume III - AMET Tables).
- 4.4 The meeting recalled MIDANPIRG Conclusion 19/6 – Web-based MID Region Air Navigation Report (2022) that urged States to provide the ICAO MID Office with: i) relevant data necessary for the development of the MID Region Air Navigation Report (2022) (Status of ASBU Implementation), by 1 December 2022; and ii) the data necessary for the measurement of the KPIs (01, 02, 13 and 14) for the period June & July 2022, by 1 October 2022. The MID Air Navigation Report (2022) will be presented to the MIDANPIRG/20 for endorsement.
- 4.5 The meeting urged States to provide information on the level of implementation of elements related to the AMET thread priority elements by 1 December 2022 in order to have an accurate assessment of implementation in this regard.

SADIS and WAFS Update

- 4.6 The subject was address in PPT1, PPT2 and WP/8 presented by the SADIS Provider State.
- 4.7 The meeting encouraged States to complete the annual SADIS efficacy survey for 2022 that will begin on 1 July 2022 noting that users will be notified via SADIS administrative messages and an ICAO State letter to SADIS focal points.
- 4.8 The meeting noted that a catalogue of METAR and TAF data has been created from data obtained during the February 2022 monitoring period so that missing data can be more easily identified. States were encouraged to review this catalogue located on SADIS server as well as the METP WG-MOG public webpage (<https://www.icao.int/airnavigation/METP/Pages/Public-Documents.aspx>). The meeting noted that if some METAR or TAF data was identified absent, States were encouraged to contact the SADIS manager (sadis.manager@metoffice.gov.uk).
- 4.9 The meeting encouraged States to review the WAFS verification data that shows the accuracy of WAFS forecasts at the following webpages: <http://www.metoffice.gov.uk/aviation/responsibilities/icao> (harmonized WAFS gridded upper air for Cumulonimbus cloud) and <http://www.emc.ncep.noaa.gov/gmb/icao> (harmonized WAFS gridded upper air forecasts for Icing potential). Note that verification data is not currently available for turbulence but expected to be published in the next couple of months.

4.10 The meeting noted guidance called the ‘SADIS Workstation Evaluation Guide’ hosted in the documentation section on SADIS as well as the WG-MOG public webpages. This allows SADIS users to evaluate their own systems and provide non-compliance issues to their software provider. The advantage is to save cost to the SADIS user noting the SADIS Workstation evaluations carried out by the SADIS provider is chargeable.

4.11 The meeting noted that IWXXM data is available on SADIS for States served by ROC London, ROC Toulouse, ROC Vienna and ROC Moscow. The meeting also noted that in due time IWXXM data from other parts of the world will be added once inter-regional connections are established noting this has taken longer than expected.

4.12 The meeting noted that the horizontal resolution of the WAFS hazard data sets for ICING, TURBULENCE and CUMULONIMBUS was increased from 1.25 degrees to 0.25 degrees. Furthermore, the new turbulence field, TURBULENCE SEVERITY, forecasts both clear air turbulence and orographic turbulence that provides their forecasts as an eddy dissipation rate (EDR). In addition, the new icing field, ICING SEVERITY, gives a categorical assessment of icing as Nil, Trace, Slight, Moderate and Severe. The SADIS Provider explained why this field is not available above FL300 as it is a forecast of liquid icing and temperatures above this level would not be conducive to liquid icing except possibly in strong updrafts associated with a CB, for which pilots would typically avoid.

4.13 These improved WAFS data sets were introduced in accordance to ICAO Annex 3 Amendment 79 (applicable 5 November 2020) and available on SADIS in the /GRIB2/COMPRESSED/EGRR/ directory. The existing Turbulence Potential, Icing Potential and 1.25-degree cumulonimbus field are no longer listed in ICAO Annex 3, but will continue to be published on SADIS until November 2023. Therefore, SADIS users are encouraged to migrate their services from the legacy 1.25-degree hazard data sets to the new 0.25-degree version as soon as possible.

4.14 The meeting also noted planned upgrades to the WAFS in November 2023 which includes an upgrade in the horizontal, vertical and temporal resolution of all WAFS data sets. The new data includes: the provision of wind, temperature, relative humidity and geopotential height at 0.25-degree resolution; data at 1000ft flight level intervals; and data at 1-hourly intervals from 6-hours to 24-hours, three hourly intervals from 27-hours to 48-hours, and for wind and temperature data at 6-hourly intervals out to 120-hours.

4.15 Furthermore, an upgrade to the WAFS SIGWX forecasts in 2024 (date to be confirmed) between World Area Forecast Centres (WAFS) will be produced for 3-hourly intervals out to 2 days and better suited for the needs of short haul and ultra-long haul operations.

4.16 Lastly, the meeting noted that in order to manage the significant increase in volume of data, the delivery mechanism will be upgraded and be SWIM-compliant. Given the aforementioned, the meeting agreed to the following Draft Conclusions:

DRAFT CONCLUSION 10/1: 0.25 DEGREE WAFS HAZARD DATA

That, the SADIS users integrate the new 0.25 degree WAFS hazard data into systems and software prior to November 2023, if they have not already done so.

DRAFT CONCLUSION 10/2: ANNEX 3 AMENDMENT 81 WAFS AND SADIS UPGRADES

That, the SADIS users be invited to:

- a) familiarize themselves with the proposed WAFS and SADIS changes planned for November 2023 and 2024;*
- b) discuss the upcoming changes with their technical departments about how their organization could adapt to these technological changes; and*
- c) get involved in trying out the new Beta SADIS API's once they become available in late 2022 or 2023.*

4.17 For more information, States were invited to access the following link: <https://www.metoffice.gov.uk/services/transport/aviation/regulated/wafs-2023>.

4.18 The SADIS Provider State provides the relevant software vendors requirements necessary to access this data and testing can be done during the 'Beta' testing phase. MET Service Providers should follow the previous draft Conclusion in preparation of receiving this data that will assist their stakeholders in flight planning.

IWXXM Implementation

4.19 The subject was addressed in WP/5 presented by the Secretariat.

4.20 The meeting recalled the ICAO MID IWXXM Implementation Webinar that was held virtually from 26 to 27 May 2021 which shared information on the background, requirements and best implementation practices of ICAO provisions and WMO means of compliance related to IWXXM.

4.21 The meeting recalled that provisions related to IWXXM became a requirement in Amendment 78 to Annex 3 applicable 5 November 2020. Specifically, the following MET related data shall be disseminated in IWXXM form in addition to TAC form: METAR and SPECI, TAF, SIGMET and AIRMET, Tropical Cyclone Advisory, Volcanic Ash Advisory and Space Weather Advisory Information.

4.22 One main outcome of the Webinar was updating the status of IWXXM implementation for seven (7) States in the MID Region as provided at **Appendix 4B**.

4.23 The meeting noted that translation services were not available in the MID Region and that providing this service now may have a negative impact on implementation. Therefore, the focus should be on those States that have implemented IWXXM; assist those States that have not yet done so. In addition, States that have not yet implemented IWXXM are urged to review ICAO Doc 10003 (Manual on the ICAO Meteorological Information Exchange Model) and the ICAO MID IWXXM Implementation Webinar material provided at the following website: <https://www.icao.int/MID/Pages/2021/>.

REPORT ON AGENDA ITEM 5: REVIEW OF AIR NAVIGATION DEFICIENCIES IN THE MET FIELD

- 5.1 The subject was addressed in WP/6 presented by the Secretariat.
- 5.2 The meeting recalled that MIDANPIRG/19 reviewed the contents of the MIDANPIRG Air Navigation Deficiency Database (MANDD). Of relevance to MET, the meeting noted that the total number of MET deficiencies is sixteen (16) priority 'A' deficiencies and that six (6) were related to QMS; and eleven (11) related to METAR, TAF, SIGMET and WAFS.
- 5.3 The meeting also noted that the majority of deficiencies listed in the MANDD still did not have any specific Corrective Action Plan (CAP) and that States are urged to provide this information for each deficiency (MIDANPIRG Conclusion 15/35 refers).
- 5.4 The meeting was informed that as of 15 June 2021 the Oman Civil Aviation Authority – Directorate General of Meteorology received QMS certificates for conforming to the requirements of ISO 9001:2015 and ISO/IEC 27001:2013. Consequently, this deficiency will be removed from the MANDD. The meeting congratulated Oman on this important achievement.
- 5.5. With reference to MET deficiencies in Libya, the Secretariat in coordination with the SADIS Manager and Libya will explore options available to obtain the necessary hardware and software in order to receive information provided by SADIS. In addition, the Secretariat will explore with the EUR Data Management Group a method to disseminate OPMET data internationally as a contingency arrangement when Aeronautical Fixed Service (AFS) is not available in order for operators to have access to this information needed for briefing and flight documentation.
- 5.6 With reference to MET deficiencies in Iraq, the Secretariat was informed via email that the Mosul International Airport (ORBM) is out of service and no longer in use currently. This was confirmed by the ICAO MID Regional Office and therefore, this related deficiency will be removed from the MANDD.
- 5.7 With reference to MET deficiencies in Syria, the meeting agreed that a bilateral agreement could be considered with another State to provide SIGMET for the Damascus FIR in light of the safety risk posed to aviation by not providing this hazardous information.
- 5.8 The meeting noted that Yemen submitted a CAP and these deficiencies planned to be removed by end of 2022; this will be reflected in the MANDD.
- 5.9 With reference to MET deficiencies in Lebanon and Sudan, no updates were provided as they did not participate in the meeting.
- 5.10 The meeting noted that the description of deficiencies related to WAFS forecasts required for briefing and flight documentation: *SADIS FTP not available* should be replaced with a more accurate description of the deficiency e.g. *payment not made on time and SADIS service ceased per contract*.
- 5.11 The list of deficiencies was updated based on the information above as provided at **Appendix 5A**.
- 5.12 The meeting noted that the implementation of IWXXM has been a standard since November 2020 and that the MET SG should consider in future meetings adding States that have

not yet implemented IWXXM to the list of Air Navigation Deficiencies in the MID Region.

5.13 The meeting reviewed a summary of WP/58 of the MIDANPIRG/19 that described a proposal coming from the Third Meeting of the Aerodromes Safety Planning and Implementation Group (ASPIG/3). In particular, the meeting reviewed the proposed MID Air Navigation Deficiencies Management Process to support the reporting of non-compliance without prejudice to the definition of ‘a deficiency’ as approved by the Council. The meeting noted that the MIDANPIRG agreed this proposal be studied by all the MIDANPIRG Sub-Groups and provide their feedback to the MIDANPIRG/20 meeting.

5.14 Of particular interest to the MET SG is the inclusion of the Safety Risk Matrix that could assist Civil Aviation Authorities (CAA) in prioritizing deficiencies that need to be remedied as soon as possible if the safety risk was intolerable. To support this endeavour, reference will be made to the IATA Safety Report 2021 that includes frequency of incidents, accidents and contributing causes. To progress this work, the meeting agreed to address this at the MID MET SG/11 meeting that will be held either the second or third week in November 2022. The meeting was strongly encouraged to review the IATA Safety Report 2021 in order to contribute to the MID MET SG/11 meeting.

5.15 The meeting also noted that the minimum reporting areas for MET could be considered after applying the Safety Risk Matrix to deficiencies in context of the IATA Safety Report 2021.

REPORT ON AGENDA ITEM 6: FUTURE WORK PROGRAMME

6.1 The subject was addressed in WP/7 presented by the Secretariat. The meeting reviewed the MET SG Terms of Reference (TORs) and no proposed changes were provided.

6.2 WMO emphasized the importance of the following two points in the TORs: In order to meet the TORs, the MET Sub Group shall: 1.2 b) provide necessary assistance and guidance to States to ensure harmonization and interoperability in line with the GANP, the MID ANP and ASBU framework; and 1.2 d) identify and review those specific deficiencies and problems that constitute major obstacles to the provision of efficient MET services, and recommend necessary remedial actions.

6.3 The meeting agreed that the MET SG/11 meeting be held virtually during the second or third week on November (one session expected). The meeting agreed that the MET SG/11 address MET Planning and Implementation Issues as well as Deficiencies in the MET field. MET SG members are expected to review the IATA Safety Report 2021 in order to populate the Safety Risk Matrix by using the frequency of weather events related to accidents and incidents as well as the severity of consequences if this weather information is not available or inaccurate. The meeting also noted that another meeting in February 2023 (one session expected) may be needed in order to make final preparations for MIDANPIRG/20.

REPORT ON AGENDA ITEM 7: ANY OTHER BUSINESS

7.1 WMO and ICAO agreed that in order to improve the synergies of the MID MET SG/10, engagement from States would be necessary to meet the current and future challenges of providing MET services for international aviation and States that have near or full MET implementation should consider assisting those States that have numerous deficiencies. Furthermore, having a Chair and Vice-Chair would be crucial to improve engagement and regional coordination. The ICAO Secretariat will seek active members to consider these roles before the MID MET SG/11 meeting.

APPENDICES

APPENDIX 2A

FOLLOW-UP ACTION PLAN ON MIDANPIRG/19 CONCLUSIONS AND DECISIONS

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/ REMARKS
C. 19/5	<p>WEB-BASED MID REGION AIR NAVIGATION REPORT (2021)</p> <p>That, the Web-based MID Air Navigation Report (2021) is endorsed.</p>	Monitoring and Reporting of ASBU implementation in the MID Region	<p>State Letter</p> <p>Data for AN Report 2021</p> <p>Air Navigation Report (2021)</p>	<p>ICAO</p> <p>States</p>	Dec. 2021	<p>Completed</p> <p>SL AN 1/7 – 21/215 dated 18 November 2021</p> <p><i>(Replies: Bahrain, Egypt, Iraq, Jordan, Kuwait, Oman, Qatar, Saudi Arabia and UAE)</i></p>
C. 19/6	<p>WEB-BASED MID REGION AIR NAVIGATION REPORT (2022)</p> <p>That,</p> <p>a) States be urged to provide the ICAO MID Office with:</p> <p>i) relevant data necessary for the development of the MID Region Air Navigation Report (2022) (Status of ASBU Implementation), by 1 December 2022;</p> <p>ii) the data necessary for the measurement of the KPIs (01, 02, 13 and 14) for the period June & July 2022, by 1 October 2022; and</p> <p>b) the MID Air Navigation Report (2022) be presented to the MIDANPIRG/20 for endorsement.</p>	Monitoring and Reporting of ASBU implementation in the MID Region	<p>State Letter</p> <p>Data for AN Report 2022</p> <p>Air Navigation Report (2022)</p>	<p>ICAO</p> <p>States</p>	Dec. 2022	<p>Ongoing</p>

No.	CONCLUSIONS AND DECISIONS	CONCERNS/ CHALLENGES (RATIONALE)	DELIVERABLE/ TO BE INITIATED BY		TARGET DATE	STATUS/ REMARKS
D. 19/25	<p>NEW EDITION OF THE MIDANPIRG PROCEDURAL HANDBOOK</p> <p>That, the new Edition of the MIDANPIRG Procedural Handbook is endorsed and be posted by the ICAO MID Office on the website.</p>	To update the New Edition of the MIDANPIRG Procedural Handbook	New Edition of the MIDANPIRG Procedural Handbook is posted on the ICAO MID Office website	ICAO	2022	Completed

MID REGION ASBU Threads & Elements (AMET B0) Monitoring Table

Priority 1: Elements that have the highest contribution to the improvement of air navigation safety, capacity and/or efficiency in the MID Region. These elements should be implemented where applicable and will be used for the purpose of regional air navigation monitoring and reporting.

Priority 2: Elements recommended for implementation based on identified operational needs and benefits.

Priority 1 Thread: Any thread with at least 1 priority 1 element.

AMET					
Element	Title	Applicability	Performance Indicators/	Performance Indicators/	Performance Indicators/
AMET B0/1	Meteorological observations products	All states	<p>Indicator*: Regional average implementation status of B0/1 (Meteorological observations products).</p> <p>Supporting Metrics: Number of States that provide the following Meteorological observations products, as required:</p> <ol style="list-style-type: none"> 1. Automatic Weather Observation System (AWOS) information (including real-time exchange of wind and RVR data) 2. Local reports (MET REPORT/SPECIAL) 3. Aerodrome reports (METAR/SPECI) 4. Lightning Information 5. Ground-based weather radar information 6. Meteorological satellite imagery 7. Aircraft meteorological report (ie. ADS-B, AIREP, etc.) 8. Vertical wind and temperature profiles 9. Wind shear alerts 	80%	Dec 2021
AMET B0/2	Meteorological forecast and warning products	All states	<p>Indicator*: Regional average implementation status of B0/2 (Meteorological forecasts and warning products)</p> <p>Supporting Metrics: Number of States that provides the following Meteorological forecast and warning products, as required:</p>	90%	Dec 2021

			<ol style="list-style-type: none"> 1. World Area Forecast System (WAFS) gridded products 2. Significant Weather (SIGWX) 3. Aerodrome Forecast (TAF) 4. Trend Forecast (TREND) 5. Take-off Forecast 6. SIGMET 7. Aerodrome Warning 8. Wind Shear Warning 		
AMET B0/3	Climatological and historical meteorological products	All states	<p>Indicator: % of States that provide Climatological and historical meteorological products, as required.</p> <p>Supporting Metric: Number of States that provide Climatological and historical meteorological products, as required</p>	85%	Dec 2021
AMET B0/4	Dissemination of meteorological products	All states	<p>Indicator: % of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM)</p> <p>Supporting Metric: Number of States disseminating Meteorological products using a variety of formats and means (TAC, Gridded, Graphical, BUFR code, IWXXM)</p>	85%	Dec 2021

4A-3

AMET Implementation Level = 55 %

B0/1

State	AWOS	Local Report	Aerodrome report	Lighting info	Ground based weather radar info	MET SAT imagery	A/C met report	Vertical wind & Temp profile	Wind shear alert	Average
Bahrain	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Egypt	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Iran	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Iraq	N	Y	Y	Y	N	N	Y	N	N	44%
Jordan	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Kuwait	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Lebanon	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Libya	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Oman	Y	Y	Y	Y	Y	Y	Y	Y	Y	100%
Qatar	Y	Y	Y	No	Y	Y	Y	Y	Y	89%
Saudi Arabia	Y	Y	Y	Y	Y	Y	Y	Y	0.25Y	92%
Sudan	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Syria	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
UAE	Y	Y	Y	Y	Y	Y	N	Y	N	78%
Yemen	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info	No Info
Total average	53%	60%	60%	53%	53%	53%	53%	53%	42%	54%

MET SG/10-REPORT
APPENDIX 4A

4A-4

B0/2

State	WAFS	SIGWX	TAF	Trend	Take-off forecast	SIGMET	AERODROME WARNING	Wind shear warning	Average
Bahrain	Y	Y	Y	Y	Y	Y	Y	Y	100%
Egypt	Y	Y	Y	Y	Y	Y	Y	Y	100%
Iran	No Info	No Info	Y	No Info	No Info	Y	No Info	No Info	25%
Iraq	N	Y	Y	Y	N	Y	Y	N	63%
Jordan	N	Y	Y	Y	Y	Y	Y	Y	88%
Kuwait	N	N	Y	Y	Y	Y	N	Y	63%
Lebanon	No Info	No Info	Y	No Info	No Info	Y	No Info	No Info	25%
Libya	Y	No Info	N	N	No Info	N	No Info	No Info	13%
Oman	Y	Y	Y	Y	Y	Y	Y	Y	100%
Qatar	Y	Y	Y	Y	Y	Y	Y	Y	100%
Saudi Arabia	Y	Y	Y	Y	Y	Y	Y	0.25Y	91%
Sudan	No Info	No Info	N	N	No Info	N	No Info	No Info	0
Syria	No Info	No Info	N	N	No Info	N	No Info	No Info	0
UAE	Y	Y	Y	Y	Y	Y	Y	Y	100%
Yemen	No Info	No Info	N	N	No Info	N	No Info	No Info	0
Total average	47%	53%	73%	60%	53%	73%	53%	48%	58%

4A-5

B0/3 & B0/4

State	B0/3	B0/4	Average
Bahrain	Y	Y	100%
Egypt	Y	0.5Y	75%
Iran	No info	0.5Y	25%
Iraq	No info	N	0
Jordan	Y	Y	100%
Kuwait	Y	0.5Y	75%
Lebanon	No info	0.5Y	25%
Libya	No info	N	0
Oman	Y	Y	100%
Qatar	Y	Y	100%
Saudi Arabia	Y	Y	100%
Sudan	No info	N	0
Syria	No info	N	0
UAE	Y	Y	100%
Yemen	No info	N	0
average	53%	53.0%	53%

	Bahrain	Egypt	Iran	Iraq	Jordan	Kuwait	Lebanon	Libya	Oman	Qatar	Saudi Arabia	Sudan	Syria	UAE	Yemen
B0/1	Green	Green	Grey	Light Green	Green	Green	Grey	Grey	Green	Light Green	Green	Grey	Grey	Light Green	Grey
B0/2	Green	Green	Yellow	Light Green	Light Green	Light Green	Yellow	Yellow	Green	Green	Light Green	Red	Red	Green	Red
B0/3	Green	Green	Grey	Grey	Green	Green	Grey	Grey	Green	Green	Green	Grey	Grey	Green	Grey
B0/4	Green	Light Green	Light Green	Red	Green	Light Green	Light Green	Red	Green	Green	Green	Red	Red	Green	Red
Average Impl.	Green	Light Green	Yellow	Yellow	Light Green	Light Green	Yellow	Yellow	Green	Light Green	Light Green	Red	Red	Light Green	Red

Average Regional Implementation is 55%

Table – Status of IWXXM Implementation in the MID Region

State	Expected implementation date	Comment
Bahrain		
Egypt		
Iraq		
Iran		
Jordan	Q3 2021	Upgraded MET-Switch; connection to COM expected shortly followed by conformance test
Kuwait	End 2021/ early 2022	
Lebanon	End 2023	
Libya		
Oman	End 2021/ early 2022	
Qatar	Mid 2021	Testing IWXXM v3.0 between MET and COM Centres
Saudi Arabia	Q2 2022	IWXXM v3.0
Sudan		
Syria		
United Arab Emirates	complete	Becoming compliant at national aerodromes
Yemen		

APPENDIX 5A

Deficiencies in the MET Field

BAHRAIN

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action
No Deficiencies Reported									

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

EGYPT

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

5A-3

Deficiencies in the MET Field

IRAN

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action
No Deficiencies Reported									

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

Deficiencies in the MET Field

IRAQ

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	-	O	Corrective Action Plan has not been formally provided by the State	Iraq	Dec 2021 2022	A
2	MID eANP VOL II, MET Table II 2	ORBM-METAR and 24 hour TAF	ORBM-METAR and 24 hour TAF not available internationally		ROC Jeddah monthly-OPMET monitoring	S	Mosul Int'l is out of service and no longer in use currently	Iraq	Dec 2022	A
3	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	Payment not made on time and SADIS service ceased per contract	January 2021	SADIS Provider	F	Coordinate with the SADIS Manager (sadis.manager@metoffice.gov.uk) on payment to resume SADIS service	Iraq	Dec 2022	A

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

Deficiencies in the MET Field

JORDAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	Payment not made on time and SADIS service ceased per contract	January 2022	SADIS Provider	F	Coordinate with the SADIS Manager (sadis.manager@metoffice.gov.uk) on payment to resume SADIS service	Jordan	Dec 2022	A

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

KUWAIT

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

Deficiencies in the MET Field

LEBANON

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Lebanon	Dec 2021 2022	A
2	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	Payment not made on time and SADIS service ceased per contract	May 2016	-	O	Coordinate with the SADIS Manager (sadis.manager@metoffice.gov.uk) on payment to resume SADIS service	Lebanon	Dec 2021 2022	A

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

LIBYA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Libya	Dec 2021 2022	A
2	Annex 3; Para 9.1.4, 9.3.1, 9.4.1 and Appendix 2, 2.1.1	WAFS forecasts required for briefing and flight documentation	Necessary hardware and software necessary to receive information provided by SADIS damaged/destroyed		SADIS Provider	O	Secretariat in coordination with the SADIS Manager and Libya to explore options	Libya	Dec 2021	A
3	MID eANP VOL II, MET Table II-2	HLLB and HLLT METAR and 24-hour TAF; HLLS METAR	HLLB and HLLT METAR and 24-hour TAF; HLLS METAR not available internationally	Nov 2021	ROC Jeddah monthly OPMET monitoring	S	ICAO RO and Libya will investigate a method to disseminate OPMET data internationally as a contingency arrangement when AFS is not available	Libya	Dec 2022	A

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

OMAN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
+	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep-2014	(USOAP-CMA finding)	⊖	As of 15 June 2021 the Oman Civil Aviation Authority – Directorate General of Meteorology received QMS certificates for conforming to the requirements of ISO 9001:2015 and ISO/IEC 27001:2013	Oman	Dec-2021 <u>2022</u>	A

No Deficiencies Reported

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

QATAR

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

Deficiencies in the MET Field

SAUDI ARABIA

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

Deficiencies in the MET Field

SUDAN

Item No	Identification		Deficiencies			Corrective Action				
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action	
1	MID eANP VOL II, MET Table II-2	HSSK and HSPN METAR and 30-hour TAF; HSOB and HSNN METAR	HSSK and HSPN METAR and 30-hour TAF; HSOB and HSNN METAR not available internationally	Oct 2021	ROC Jeddah monthly OPMET monitoring	S	Corrective Action Plan has not been formally provided by the State	Sudan	Dec 2022	A

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

SYRIA

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	MID eANP VOL II, MET Table II-2	OSAP METAR and 24-hour TAF	OSAP METAR and 24-hour TAF not available internationally	Nov 2013	-	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec 2021 2022	A
2	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State	Syria	Dec 2021 2022	A
3	Annex 3; Para 7.1	SIGMET Implementation	Non-Issuance of SIGMET information	Nov 2017	(USOAP – CMA finding)	O	Corrective Action Plan has not been formally provided by the State Consider bi-lateral arrangement	Syria	Dec 2021 2022	A

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Deficiencies in the MET Field

UAE

Item No	Identification		Deficiencies			Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination	Description	Executing Body	Date of Completion	Priority for Action

No Deficiencies Reported

⁽¹⁾ Rationale for non-elimination: "F"= Financial

"H"= Human Resources

"S"= State (Military/political)

"O"= Other unknown causes

Deficiencies in the MET Field

YEMEN

Item No	Identification		Deficiencies				Corrective Action			
	Requirement	Facilities/ Services	Description	Date First Reported	Remarks/ Rationale for Non-elimination		Description	Executing Body	Date of Completion	Priority for Action
1	Annex 3; Para 2.2	QMS Implementation	Lack of Implementation of QMS	Sep 2014	-	F H	A contract is being signed with an external quality consultant to assist in establishment & implementation of QMS in the provision of MET service by the end of year 2022.	Yemen	Dec 2022	A
2	Annex 3; Para 7.1	SIGMET Implementation	Non-issuance of SIGMET information	Nov 2017	-	S	All OPMET (SIGMET) information is issued internally but not transmitted internationally due to war, considering a reconnection with another MET regional centre other than Jeddah.	Yemen	Dec 2022	A
3	MID eANP VOL II, MET Table II-2	OYAA METAR and 30-hour TAF; OYHD, OYRN, OYSN, OYTZ METAR and 24-hour TAF	OYAA METAR and 30-hour TAF; OYHD, OYRN, OYSN, OYTZ METAR not available internationally	Dec 2019	Annual OPMET monitoring	S	All OPMET information is issued internally but not transmitted internationally due to war, considering a reconnection with another MET regional centre other than Jeddah.	Yemen	Dec 2022	A

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

Note:* Priority for action to remedy a deficiency is based on the following safety assessments:

'U' priority = Urgent requirements having a direct impact on safety and requiring immediate corrective actions.

Urgent requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is urgently required for air navigation safety.

'A' priority = Top priority requirements necessary for air navigation safety.

Top priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation safety.

'B' priority = Intermediate requirements necessary for air navigation regularity and efficiency.

Intermediate priority requirement consisting of any physical, configuration, material, performance, personnel or procedures specification, the application of which is considered necessary for air navigation regularity and efficiency.

Definition:

A deficiency is a situation where a facility, service or procedure does not comply with a regional air navigation plan approved by the Council, or with related ICAO Standards and Recommended Practices, and which situation has a negative impact on the safety, regularity and/or efficiency of international civil aviation.

⁽¹⁾ Rationale for non-elimination: “F”= Financial

“H”= Human Resources

“S”= State (Military/political)

“O”= Other unknown causes

METEOROLOGY SUB-GROUP (MET SG)

TERMS OF REFERENCE

1. Terms of Reference

1.1 The terms of reference of the MET Sub-Group are:

- a) ensure that the implementation of MET in the MID Region is coherent and compatible with developments in adjacent regions, and is in line with the Global Air Navigation Plan (GANP), the Aviation System Block Upgrades (ASBU) framework and the MID Region Air Navigation Strategy;
- b) monitor the status of implementation of the MID Region MET-related ASBU threads/elements included in the MID Region Air Navigation Strategy as well as other required MET facilities and services, identify the associated difficulties and deficiencies and provide progress reports, as required;
- c) keep under review the MID Region MET performance objectives/priorities, develop action plans to achieve the agreed performance targets and propose changes to the MID Region MET plans/priorities, through the MIDANPIRG as appropriate;
- d) seek to achieve common understanding and support from all stakeholders involved in or affected by the MET developments/activities in the MID Region;
- e) provide a platform for harmonization of developments and deployments in the MET domain;
- f) monitor and review the latest MET developments that support Air Navigation and provide expert inputs for the implementation of the Air Navigation Systems related to MET based on ATM operational requirements;
- g) provide regular progress reports to the MIDANPIRG concerning its work programme; and
- h) review periodically its Terms of Reference and propose amendments, as necessary.

1.2 In order to meet the Terms of Reference, the MET Sub Group shall:

- a) monitor the status of implementation of the required MET facilities and services in the MID Region;
- b) provide necessary assistance and guidance to States to ensure harmonization and interoperability in line with the GANP, the MID ANP and ASBU framework;
- c) provide necessary inputs to the MID Region Air Navigation Strategy through the monitoring of the agreed Key Performance Indicators related to MET;

- d) identify and review those specific deficiencies and problems that constitute major obstacles to the provision of efficient MET services, and recommend necessary remedial actions;
- e) keep under review the adequacy of ICAO SARPs requirements in the area of MET, taking into account, inter alia, changes in user requirements, the evolution of operational requirements and technological developments;
- f) develop proposals for the updating of relevant ICAO documentation related to MET, including the amendment of relevant parts of the MID ANP, as deemed necessary;
- g) monitor and review technical and operating developments in the area of MET and foster their implementation in the MID Region in a harmonized manner;
- h) foster the integrated improvement of MET services through proper training and qualification of the MET personnel;
- i) coordinate with relevant MIDANPIRG and RASG-MID Subsidiary bodies for issues with common interests; and
- j) liaise with other States providing services and/or serve as inter-regional exchange of meteorological information for international civil aviation (e.g. SADIS (U.K.), VAAC Toulouse (France), TCAC New Delhi (India), Regional OPMET Centre Vienna (Austria)).

2. Composition

2.1 The Sub-Group is composed of:

- a) MIDANPIRG Member States;
- b) World Meteorological Organization (WMO) and other concerned International and Regional Organizations as observers; and
- c) other representatives from provider States and Industry may be invited on ad hoc basis, as observers, when required.

3. Working Arrangements

3.1 The Chairperson, in close co-operation with the Secretary, shall make all necessary arrangements for the most efficient working of the Subgroup. The Subgroup shall at all times conduct its activities in the most efficient manner possible with a minimum of formality and paper work (paperless meetings). Permanent contact shall be maintained between the Chairperson, Secretary and Members of the Subgroup to advance the work. Best advantage should be taken of modern communications facilities, particularly video-conferencing (Virtual Meetings) and e-mails.

3.2 Face-to-face meetings will be conducted when it is necessary to do so.

ATTACHMENT A

**MET SG/10 VIRTUAL MEETING****(17 – 19 May 2022 from 08:00 to 10:00 UTC)***List of Participants*

State/ Org	Name	Title
Bahrain	Mr. Khaled Hussein Yassen	Chief of MET Operations & Observations
	Mrs. Haneen Mahmood Althawadi	Head Weather Forecasting
	Mr. Abdulaziz Albalooshi	Meteorologist Information Systems
Egypt	Mr. Yasser Abdelgwad El Sayed	Director of Cairo Airport Forecast Center
	Mr. Samer Hussein Emam	General Manager of AIS and Airspace Affairs
	Mr. Sherif Aql	Telecommunication Inspector
	Mr. Hesham Helmy Elsayed	Meteorological Inspector
	Mr. Walid Ibrahim Gomaa	Operation Department Manager
	Mr. Adel Abdel Halim Mahmoud	Design and Development Dept Manager
	Mr. Ahmed Ammar	Air Traffic Controller
	Mr. Moataz Hany	Air Traffic Controller
Iran	Mr. Mohammad Enayat	Head of Dept of Aeronautical Meteorology
Kuwait	Mr. Dherar Alali	MET Inspector
Libya	Mr. Eshewi M. Rabha	Chief Supervisor for Weather Forecast
Oman	Mr. Said Abdullah Al-Harhi	Acting General Director of Meteorology
	Mr. Malik Said Al Huseini	Chief of Aviation Weather Forecasting
	Mr. Majid Omar Al-Hakmani	Head of Systems and Data Processing
	Mr. Mohammed M. S. Kashoob	Chief of MET Operation Salalah
	Mr. Suhail M. Jaddad	Aeronautical Systems Engineer
Qatar	Mr. Mohammad A Kubaisi	Head of Weather Forecasting & analysis Section
	Mr. Ahmad Abu Obeid	Meteorological Consultant
Saudi Arabia	Mr. Hamdan Meshel Alshaibani	Air Navigation Safety Inspector
	Mr. Sami Mansour Alwafi	Aviation Service Manager
	Mr. Ali Awad Al-Dahri	Aeronautical Telecommunication Specialist

State/ Org	Name	Title
	Mr. Ali Attiah Aljabril	Aeronautical Telecommunication Operations
	Mr. Tariq Abbas Alsulaimani	Computer Engineer
	Mr. Majed Khalid Majhoub	Data Traffic Officer
	Mr. Waleed Yousef Alsulaim	Air Navigation Safety Inspector
UAE	Mr. Ahmed Al Obeidli	Senior Manager – Air Navigation
	Mr. Waleed Al Riyami	Senior Specialist – Air Traffic Services
UK	Miss Karen Shorey	WACAF London and SADIS Manager
Yemen	Mr. Ali Gamal A. Mohammed	Director of Weather Forecasting
AACO	Mr. Joud Charafeddine	Specialist – Industry Affairs
WMO	Mr. Greg Brock	Head – Services for Aviation
ICAO	Mr. Mohamed Smaoui	Acting Regional Director
	Mr. Christopher Keohan	Regional Officer, Air Navigation Systems Implementation (Meteorology)
	Mr. Radhouan Aissaoui	Regional Officer, Information Management
	Mrs. Manal Wissa	Programme Analysis Associate